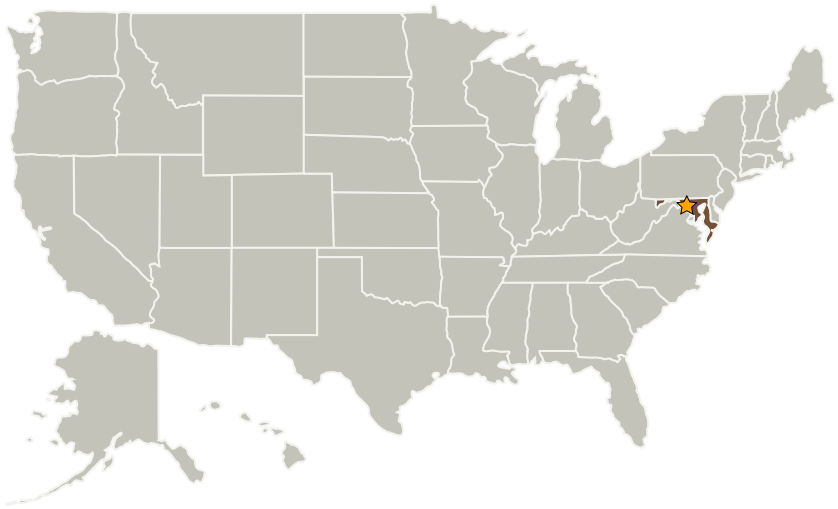
Monolithic Time Delay Integrated APD Arrays, Phase II

Completed Technology Project (2009 - 2011)

Project Introduction

The overall goal of the proposed phase II SBIR program is to develop a compact, high SNR TDI APD array for future NASA earth observing missions. The enabling TDI APD technology is based on ultra-high sensitivity AlInAs/GaInAs APDs operable in the 1240 to 1640-nm spectra band integrated with Si CCDs that will enable for the first time, true TDI and CCD-like detector operation at these wavelengths. The performance of this TDI APD array will meet or exceed current performance requirements for radiometric sensors. The TDI APD array sensor will be designed to operate at 300K resulting in a significant weight, size and power reduction. At the conclusion of the program, we will deliver to NASA for evaluation and for mission insertion, fully packaged end-to-end tested TDI APD arrays with SNR in the range of 570-1066 within the 1240-nm and 1640-nm spectral band.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Epitaxial Technologies, LLC	Supporting Organization	Industry	Baltimore, Maryland

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations
Maryland

Project Transitions

September 2009: Project Start

March 2011: Closed out

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.1 Detectors and Focal Planes